

MULTI-STAGE HELICAL SCREW ROTOR

Abstract of the Disclosure

A vacuum pump includes an inlet port (14) and an exhaust port (86, 88). Gas from an enclosure connected to the inlet port is pumped to the exhaust port by first and second rotors (18, 52, 254) which are mounted on first and second shafts (30, 60) extending through a pump chamber (112). The rotors are connected with shaft sections (140, 150, 240, 250) which include a lobe (142, 172, 242, 242') extending from the shaft sections and a mating channel (152, 182, 252, 252') defined in the other. The lobes matingly engage the channels during rotation of the rotors to form a suction section (154). The suction section (154) compresses a volume of gas entering the pump from the inlet port (14) reducing the power consumed to move the volume of gas through the pump chamber more easily and increase pump efficiency.